Operating manual

Professional wet vacuum cleaner Aquatix

SHG Spechtenhauser Hochwasser- und Gewässerschutz GmbH
Gewerbestraße 3, D-86875 Waal, Germany

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1 General information

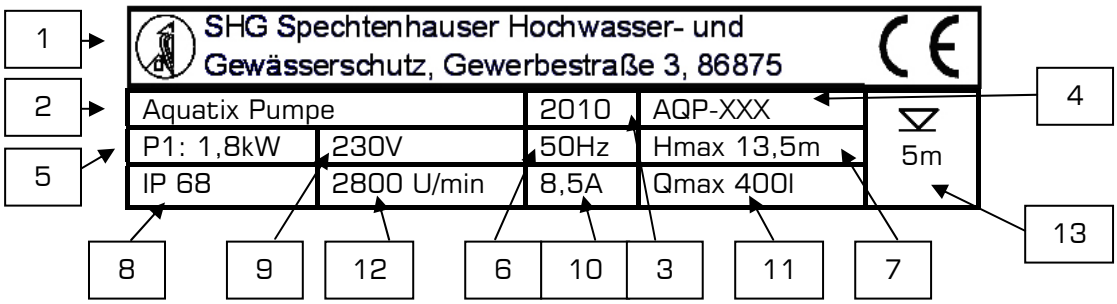
1.1 Purpose

The wet vacuum cleaner Aquatix is suitable for sucking up non-flammable, non-hazardous liquids including sludge, stones and other solids and suspended solids.

1.1.1 Marking of the wet vacuum cleaner Aquatix

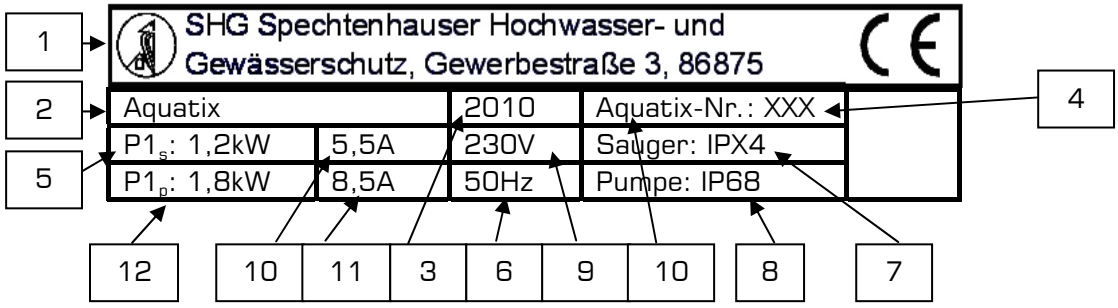
Each wet vacuum cleaner and each draining pump is marked by a type plate.

The type plate of the draining pump contains the following information:



1: Manufacturer
2: Type designation
3: Year of manufacture
4: Serial number
5: Electrical input
6: Frequency
7: Max. head
8: Protection class
9: Operating voltage
10: Nominal current
11: Max. capacity
12: Nominal rotation speed
13: Max. immersion depth

The type plate of the Aquatix contains the following information:



1: Manufacturer
2: Type designation
3: Year of manufacture
4: Serial number
5: Electrical input suction device
6: Frequency
7: Protection class suction device
8: Protection class pump
9: Operating voltage
10: Nominal current suction device
11: Nominal current pump
12; Electrical input pump

1.1.2 Application

The professional wet vacuum cleaner Aquatix is designed for clear water, sewage and waste water including sludge, stones and other solids and suspended solids. The Aquatix must not be used in explosive areas.

1.1.3 Description

2 Safety instructions

(General safety instructions as per VDMA 24292)
This operation manual gives basic instructions that should be followed carefully during installation, operation and maintenance. It is essential that this manual is carefully read by the responsible personnel/operator before assembly and commissioning. It is always to be kept available at the installation/usage site of the pump.

2.1 Markings and symbols in this operating instructions

Safety instructions given in the operating manual, the non-observance of which could cause danger to life have been specifically highlighted with the general danger symbol.

The presence of dangerous voltage is identified with the safety symbol.

Other safety points in these instructions, the non-observance of which may endanger machinery or its operation, are marked as follows.

Symbols directly on the pump itself, e.g.

- Direction of rotation
- Type plate

must be carefully observed and must be maintained in a legible condition.

2.2 Qualifications of personnel

An authorized (certified) electrician and mechanic shall carry out all work. Scope of responsibility and supervision of the personnel must be exactly defined by the operator. If the staff does not have the necessary knowledge, they must be trained and instructed, which may be performed by the manufacturer or supplier on behalf of the operator, moreover, the operator is to make sure that the contents of the operating manual are fully understood by the personnel.

2.3 Hazards in the event of non-compliance with the safety instructions

Non-compliance with the safety instructions may produce a risk to the personnel as well as to the environment and the machine and results in a loss of any right to claim damages or compensation. For example, non-compliance may involve the following hazards:

- Failure of important functions of the pump
- Failure of specified procedures of maintenance and repair
- Exposure of people to electrical, mechanical and chemical hazards
- Endangering the environment owing to hazardous substances being released

2.4 Safety regulations for owner/operator

All safety instructions contained in this manual, all relevant national and local health and safety codes and any other service and safety instructions issued by the owner shall be complied with.
Always follow these safety instructions before using the wet vacuum cleaner:

1. **For your own safety**
   Only allow the wet vacuum cleaner to be used by persons who have been trained in its use and who have been explicitly authorized to use it.

Despite its simple handling the wet vacuum cleaner is not suitable for children.
The use of the wet vacuum cleaner is subject to valid national regulations. Besides the operating instructions and the binding accident prevention regulations valid in the country of use, observe recognized regulations for safety and proper use. Do not use any unsafe work techniques.

2. Transport

Before transporting the dirt tank, close all the locks. Do not tilt the cleaner if there is liquid in the dirt tank. Only use the intended carrying handles to transport the cleaner. Do not use a crane hook to lift the cleaner.

3. Storage

Store the appliance in a dry place, protected from frost.

4. Purpose and intended use

The vacuum cleaner described in this operating manual is suitable for commercial and fire brigade use.

The following materials should not be picked up by the vacuum cleaner:
- hazardous dust
- hot materials (burning cigarettes, hot ash, etc.)
- flammable, explosive, aggressive liquids (e.g. petrol, solvents, acids, alkalis, etc.)
- flammable, explosive dust (e.g. magnesium or aluminum dust, etc.)
- hot liquids (Temperature T>50°C)

5. Precautions and safety regulations when using the vacuum cleaner

Before start-up:
Inspect power cord regularly to detect signs of damage, e.g. cracks or ageing.
If the power cord is damaged, it must be replaced by Spechtenhauser service or an electrician to avoid danger before use of the vacuum cleaner is continued.
Use only the type of power cord specified in the operating manual.
Do not damage the power cord (e.g. by moving over it or pulling or crushing it). Disconnect the power cord by pulling the plug only (do not pull or tug the power cord).
Inspect the vacuum cleaner to ensure that it is in proper condition. Plugs and couplings in power cords must at least have splash protection.
Never use the vacuum cleaner if the filter element is damaged.

6. Picking up liquids

If foam develops or liquid emerges, stop work immediately and empty the dirt tank.

7. Electrical components

Check the rated voltage of the vacuum cleaner before connecting it to the mains supply system. Ensure that the voltage shown on the type plate corresponds to the voltage of the local mains power supply.
If you are using an extension cord, use only those specified by the manufacturer or higher quality ones.
It is recommended that the vacuum cleaner should be connected via a residual current circuit breaker. This stops the supply of electricity if the leakage current to earth exceeds 30 mA for 30 ms or it has an earth tester circuit.
The protection class of all plug connections is IP68.

When using an extension lead, check the minimum cross-sec-tions of the cable:

Cable length m	Cross section	
	< 16A	< 25A
up to20m	Ø 1,5mm²	Ø 2,5mm²
20 to 50m	Ø 2,5mm²	Ø 4,0mm²

Arrange the electrical parts (sockets, plugs and couplings) and lay down the extension lead so that the protection class is maintained.
Never spray water on to the upper section of the vacuum cleaner. Danger for persons, risk or short-circuiting.

Observe the latest edition of the IEC regulations.

8. Accessories and spare parts

Only use the cleaner with original accessories and spare parts. Using spare parts and accessories authorized by the manufacturer is in interest of safety. Use of other parts may exempt the manufacturer from any warranty or compensation claims.

9. Maintenance, cleaning and repair

Only carry out maintenance work described in the operating instructions.
Always pull out the mains plug before cleaning and maintenance of the vacuum cleaner.

2.5 Safety instructions relevant for maintenance, inspection and assembly work

It shall be the user's responsibility to ensure that all maintenance, inspection and assembly work is performed by authorized and qualified personnel who have adequately familiarized themselves with the subject matter by studying this manual in detail.
Any work on the machine shall only be performed when it is at stand-still, it is being imperative that the procedure for shutting down the machine described in this manual be followed. Wet vacuum cleaners which convey hazardous media must be decontaminated
All waste emissions such as used oil must be appropriately disposed of, oil spills must be cleaned up and emissions to the environment must be reported. On completion of work all safety and protective facilities must be reinstalled and made operative again.
Any modification may be made to the pump only after consultation with the manufacturer. Using spare parts and accessories authorized by the manufacturer is in interest of safety. Use of other parts may exempt the manufacturer from any warranty or compensation claims.

2.6 Unauthorized modes of operation

The reliability of the wet vacuum cleaner delivered will be only guaranteed if it is used in the manner intended, in accordance with this manual. The limit values specified in the data sheet must under no circumstances be exceeded. These installation and operation instructions do not supersede or exclude generally valid regulation and standards.

3 Technical data

3.1 Equipment and weight

Aquatix

Operating voltage:	230 V
Frequency:	50 Hz
Fuse:	16 A
Power consumption:	1,2 kW
Weight:	44 kg
Volume flow (air):	3600 l/min
Sound pressure level (EN 60704-1)	64 dB
Dimensions LxWxH:	550 x 500 x 870 mm

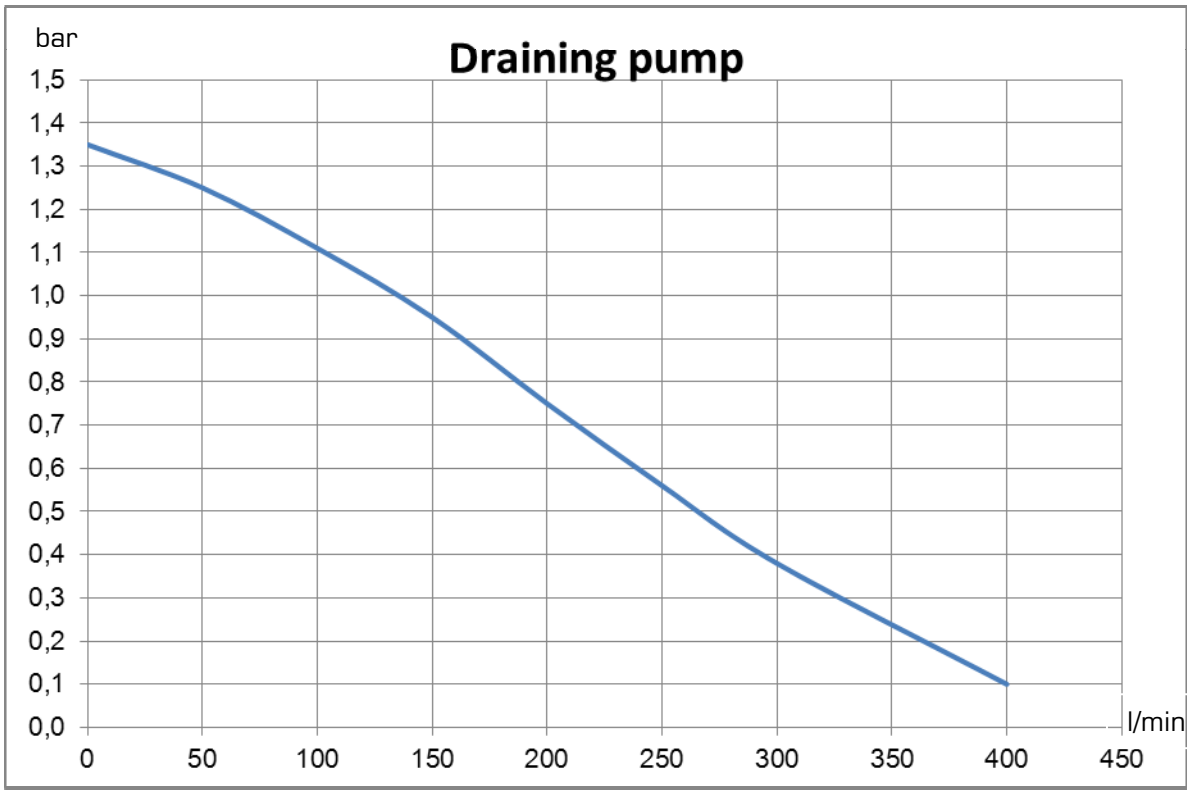
3.2 Draining pump

Type:	Two-channel impeller sewage pump
Operating voltage	230 V
Power consumption P1:	1,8 kW
Protection class:	IP68
Max. head:	14m
Max. solid size:	50 mm
Pump housing:	Stainless steel
Impeller:	Cast iron

3.3 Pump performance

	Head H [bar]	**0,1**	**0,2**	**0,4**	**0,6**	**0,8**	**1,0**	**1,2**	**1,4**
Draining pump	**Capacity [l/min]**	400	360	290	240	190	135	70	0

3.4 Capacity-head table draining pump



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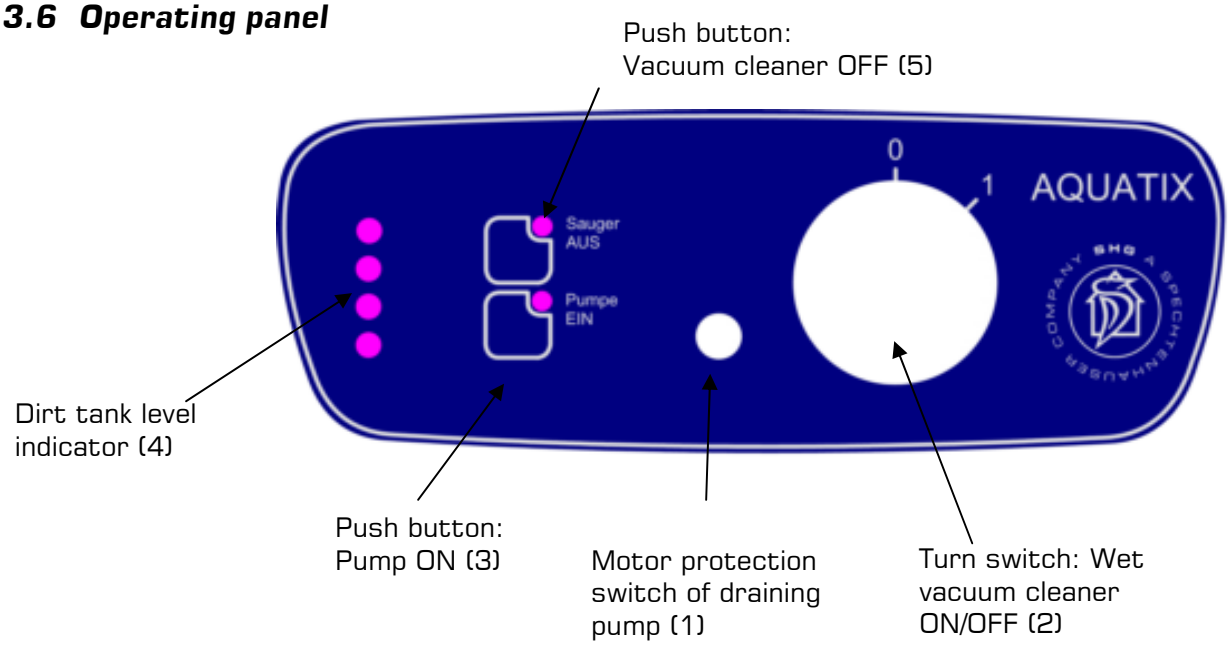
3.5 Dirt tank

Material:	PE-HD
Volume	80 l
Outlet:	C-Storz

3.6 Operating panel



1. Motor protection switch:
   Protects the draining pump against overload e.g. in case of blockages. If the motor protection switch trips reset the switch by pushing. If the motor protection switch trips again check if there is a blockage in the pump. (see section 4.5).
2. Turn switch: Wet vacuum cleaner ON/OFF:
   Set the switch to position "1". The vacuum cleaner motor starts.
3. Push button: Pump ON:
   Manual operation of the draining pump, e.g. for emptying of the dirt tank
4. Dirt tank level indicator:
   Indicates the current liquid level inside the dirt tank
5. Push button: Vacuum cleaner OFF:
   For short-term stop of the suction operation, e.g. in case of a blocked suction tube

4 Operating the wet vacuum cleaner

Caution:
The wet vacuum cleaner may only be operated in compliance with the instructions and information of this operating manual.

Note:
The operating voltage shown on the type plate must correspond to the voltage of the mains power supply.

Danger from electric shock:
Bring electrical plug connections to a flood-proof area to protect them from water. Watch out for rising water levels in flood areas!

Caution:
For outdoor use, the provisions of EN 60 335-2-41 must be observed.

Danger from electric shock:
The wet vacuum cleaner may only be operated over FI-secured (residual current circuit breaker) safety sockets.

Caution:
The wet vacuum cleaner is no able to suck foam, as foam can't be measured by the automatic level control system.

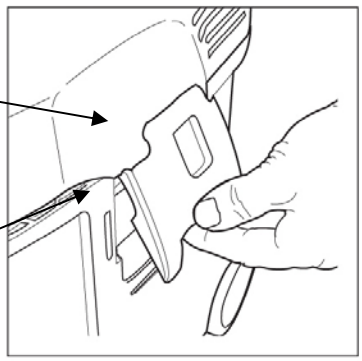
4.1 Before starting

For safe working on and with the wet vacuum cleaner, the wearing of safety shoes and safety gloves is recommended, in order to prevent injury from crushing or cutting.

Caution:
Always transport the wet vacuum cleaner with the handles and wheels provided for this purpose only.

Each time when using the wet vacuum cleaner, also ensure the following points:

1. The mains plug should not yet be inserted into a socket.
2. Open the retaining clamps, disconnect the plug-and-socket connections and remove upper section of the cleaner.
3. Take the accessories out of the dirt tank and the packaging.
4. Fit the upper section of the cleaner, close the retaining clamps and connect the plug-and-socket connections.
5. Ensure that the retaining clamps fit properly.



On delivery some of the accessories are lying in the tank and must be removed before the wet vacuum cleaner is used for the first time. The mains plug should not yet be inserted into a socket.

4.2 Picking up liquids

The wet vacuum cleaner Aquatix is only designed for picking up liquids.

Caution:
Do not pick up flammable liquids.

Before picking up liquids check the floater for proper operation (See section **Fehler! Verweisquelle konnte nicht gefunden werden.**.)

If foam appears, stop work immediately and empty the tank. To reduce the amount of foam, use foam killer.

4.3 Operation

1. Mount the suction hose on the inlet side of the wet vacuum cleaner.

2. Ensure that the cleaner is switched off.

3. Mount a dimensionally stable spiral pressure hose with matching coupling (C- or B-Storz) to the outlet side of the pump. A suitable fire hose can now be connected to this spiral hose. Lay this at a suitable drain or collection tank. The end of the pressure hose must be adequately secured against impact. The fire hose should be laid without kinks where possible to achieve an optimum pumping power. It is strongly recommended that you use the optional dimensionally stable spiral pressure hose for the first 3 m.

Danger:
Ensure that the pressure hose end is adequately secured and fixed. Otherwise, there is the risk of the hose end being hit when switching on the wet vacuum cleaner.

4. Insert the power cord into a properly installed and fused socket with earthing contact.

Danger from electric shock:
The wet vacuum cleaner may only be operated over FI-secured (residual current circuit breaker) safety sockets.

5. Switching on the vacuum cleaner. Turn the ON/OFF switch to position “1”. The vacuum cleaner motor starts.

6. The vacuum cleaner is ready for picking up liquids.

7. The emptying of the dirt tank is carried out automatically. (see section 3.7 and 6.3).

8. In case of a soiled stainless steel filter element, clean the filter element manually (see section 6.4).

4.4 After finishing work

1. Turn the switch to position „0“ for switching off the vacuum cleaner.
2. Pull the mains plug out of the socket.
3. Wind up the power cable and hang it on the handle.
4. Empty the dirt tank and clean the vacuum cleaner.
5. Store the upper section of the cleaner separately so that the filter element can dry. In case of strongly soiled liquids clean the draining pump separately (see section **Fehler! Verweisquelle konnte nicht gefunden werden.**).
6. Store the cleaner in a dry room where it is protected from unauthorized use.

4.5 Maintenance/cleaning of the draining pump

Caution:
Always pull out the mains plug before cleaning and maintenance of the draining pump. All maintenance, inspection and assembly work must be performed by authorized and qualified personnel who have adequately familiarized themselves with the subject matter by studying this manual in detail.

1. Make sure that the mains plug is pulled out of the socket.
2. Disconnect both plug-and-socket connections and remove the upper section of the cleaner from the dirt tank.

3. Unscrew both hose clamps and open the elastic connection between pump and pressure line.

4. Unscrew the power plug of the pump.

5. Open the cable feedthrough of the pump power cable at the dirt tank.

6. Pull the power cable inside the dirt tank.

7. Lift the pump out of the dirt tank. Ensure that the elastic connector remains on the outlet of the pump.

8. Remove the intake nozzle from the pump by unscrewing the three screws.

9. Place the pump upright.

10. Remove each second screw from the stainless steel housing, starting with the marked screw on the image.

11. Remove the motor from the spiral housing. Removing of the impeller from the motor is not permitted.

12. Clean the spiral housing and the impeller and check the impeller for free movement.

13. Place the motor over the spiral housing (see image) and screw the motor to the spiral housing.

14. Installation of the pump is carried out in the reverse order of dismounting.

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5 Accessories

Standard accessories included in delivery:

- 4m suction hose
- 1m suction tube
- Water vacuuming nozzle
- Crevice nozzle

Optional accessories:

- Accessory pack with 5 m PVC spiral hose, gate valve and blank cap
- PVC spiral hoses for optimum capacity
- Gate valve with C-Storz couplings
- 4 tire equipment with parking break
- Safety switches: portable residual current devices (PRCD)

Storing of the standard accessories in the dirt tank:

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6 Service and Maintenance

It shall be the user's responsibility to ensure that all maintenance, inspection and assembly work is performed by authorized and qualified personnel who have adequately familiarized themselves with the subject matter by studying this manual in detail.
Any work on the machine shall only be performed when it is at stand-still, it is being imperative that the procedure for shutting down the machine described in this manual is to be followed.
Pumps and pump units which convey hazardous media must be decontaminated. All waste emissions such as used oil must be appropriately disposed of, oil spills must be cleaned up and emissions to the environment must be reported. On completion of work all safety and protective facilities must be reinstalled and made operative again.

6.1 Maintenance rate

The wet vacuum cleaner is to be cleaned and checked for damages after each use.

Danger from electric shock:
Only carry out work on the wet vacuum cleaner when it is disconnected from the network by removing the network plug from the power supply. Prevent accidental restart of the wet vacuum cleaner by taking appropriate measures.

6.2 Motor

With all wet vacuum cleaners, opening of the engine is not permitted. Repairs and maintenance on the motor may only be carried out by Spechtenhauser Customer Service or at the plant. In case of infringement, all claims for warranty and damages are lost.

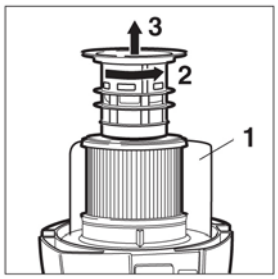
6.3 Emptying the dirt tank

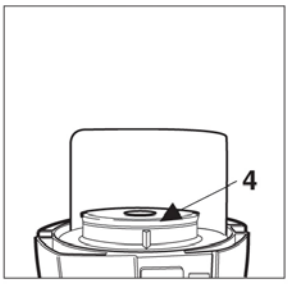
1. Switch off the vacuum cleaner and pull the mains plug out of the socket.
2. Disconnect both plug-and-socket connections between upper section and dirt tank of the vacuum cleaner.
3. Remove suction and pressure hose from the vacuum cleaner.
4. Remove the upper section of the cleaner from the dirt tank.
5. Open the retaining clamps and remove the intermediate ring from the tank.
6. Tip out the collected dirt.
7. Dispose of the dirt in accordance with legal regulations.

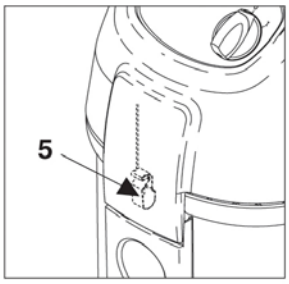
After emptying the tank: clean the rim of the tank and the seals in the intermediate ring and the upper section of the cleaner before refitting them. If the seal or groove is dirty or damaged, the suction performance will be reduced.
Before reinserting the suction hose: clean the inlet fitting and hose collar

8. Clean the dirt tank and the pump and dry wet machine parts.
9. Place the upper section on the dirt tank only in dry condition.
10. Connect both plug-and-socket connections properly.

6.4 Replacing filter element







1. Open the retaining clamps and remove the upper section of the cleaner from the dirt tank. Lay the upper section of the cleaner down with the filter element facing upwards. Do not place the upper section of the cleaner on the guard (1) and do not damage the filter element.

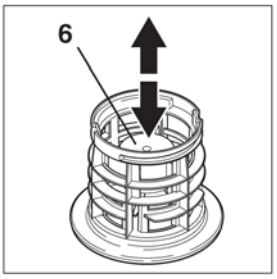
2. Turn the filter holder anti-clockwise (2) and remove it (3).

3. Carefully remove the filter element.

4. Clean the filter seal (4). Check it for damage and replace if necessary.

5. Check antistatic clamp (5) for damage and replace if necessary.

6. Check the floater (6) for proper operation: When you turn the filter holder, the floater should move back and forth easily.



7. Fit the (new) filter element.

8. Fit the filter holder and turn it clockwise to secure it.

9. Dispose of the used filter element in accordance with legal regulations.

Caution:
Never use the wet vacuum cleaner without a filter.

7 Troubleshooting

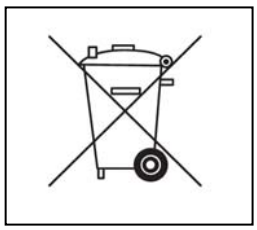
Malfunctions; causes and rectification

Fault	Cause	Remedy
Motor does not start	Fuse of the mains socket has blown.	Connect mains fuse.
	Overload protection switch has tripped.	Switch off the wet vacuum cleaner and allow it to cool for approx. 5 minutes. If the cleaner cannot be started again, contact the Spechtenhauser service department.
	Self-acting carbon brush is worn.	Have carbon brushes changed by Spechtenhauser service
Reduced suction power	Suction head to high.	Reduce suction head.
	Clogged suction hose/nozzle	Clean suction hose/nozzle
	Filter element is clogged.	See section 6.4
Voltage fluctuations.	Impedance of power supply is too high.	Connect the cleaner to another socket closer to the fuse box. Voltage fluctuations over 7% should not occur if the impedance at the transfer point is $\leq$ 0.15 Ω.

In all further questions, please contact our customer service department.

8 Further information

8.1 Recycling the wet vacuum cleaner



Make the old cleaner unusable immediately.

- Unplug the cleaner and cut the power cord.

Do not discard of electrical appliances with household waste.

As specified in European Directive 2002/96/EC on old electrical and electronic appliances, used electrical goods must be collected separately and recycled ecologically.

Contact your local authorities or your nearest dealer for further information.

8.2 Guarantee

Our general conditions of business are applicable with regard to the guarantee. Subject to change as a result of technical advances

8.3 Tests and approvals

Electrical tests must be performed in accordance with the provisions of safety regulations (VBG4) and to DIN VDE 0701 Part 1 and Part 3. In accordance with DIN VDE 0702 these tests must be performed at regular intervals and after repairs and modifications.
The wet vacuum cleaner has been approved in accordance with IEC/EN 60335-2-69.

EG-Konformitätserklärung
Declaration of EC-Conformity
Attestation de Conformité CE

Hiermit erklären wir, dass alle Exemplare unserer Geräte
Herewith we declare that all our devices
Nous attestons par la présente, que tous nos produits

Aquatix

den wesentlichen Schutzanforderungen folgender EG-Richtlinien entsprechen:
comply with the following provisions applying to:
correspondent aux principales directives CE suivantes:

EG-Maschinenrichtlinie	**2006/42/EG**
EG-Niederspannungsrichtlinie	**2006/95/EG**

Angewandte harmonisierte Normen, insbesondere:
Applied harmonized standards in particular:
Principales normes harmonisées:

2006/42/EG	**2006/95/EG**
EN 13857	EN 60335-1
EN 809	EN 60335-2-41
EN 12100-1/2-A1	

Bei einer nicht mit uns abgestimmten Änderung des Gerätes verliert diese Erklärung ihre Gültigkeit.
By altering the device without approval the declaration would invalidate.
Toute modification de la machine, effectuée sans notre accord, annule la validité de la présente déclaration.

86875 Waal, 20.03.2012

SHG Spechtenhauser Hochwasser- und Gewässerschutz GmbH

Jochen Wagner
Geschäftsführer

Name des Bevollmächtigten der technischen Unterlagen nach MRL 2006/42/EG:
SHG Spechtenhauser Hochwasser- und Gewässerschutz GmbH
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